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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,118	07/11/2000	David W. Cannell	5725.0393	1975
22852	7590	04/01/2005		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER SHEIKH, HUMERA N	
			ART UNIT 1615	PAPER NUMBER

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/614,118		CANNELL ET AL.	
	Examiner		Art Unit	
	Humera N. Sheikh		1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 1-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/2/05</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Status of the Application

Receipt of the Amendment, Applicant's Arguments/Remarks and the Information Disclosure Statement (IDS), all filed 02/02/05 is acknowledged.

This application contains claims 1-29 drawn to an invention nonelected with traverse in the response filed 10/17/02. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 1-56 are pending. Claim 30 has been amended. Claims 1-29 have been withdrawn. Claims 30-56 remain rejected.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 30-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wisotzki et al. (US Pat. No. 4,900,545) or Koga et al. (US Pat. No. 5,660,838) or Syed et al. (US Pat. No. 5,641,477).

Witsozki ('545) teaches a method for the regeneration of hair split-ends and for caring for and revitalizing mistreated hair, comprising applying to the hair, a treatment composition comprising mono- or disaccharides, more especially, the pentoses (5 C-atoms) and hexoses (6 C-

atoms), and also the disaccharides derived from the pentoses and hexoses (see reference column 1, line 49 through col. 2, line 49).

Witsozki teaches that the mono- or disaccharides are any aldoses and ketoses or their mixtures. Witsozki further teaches that suitable monosaccharides include glucose, mannose, galactose, ribose, arabinose, xylose, fructose and sorbose, while suitable disaccharides include sucrose, lactose, maltose and cellobiose (col. 2, line 36-49). Also suitable are naturally occurring or technical mixtures wherein the mentioned mono- or disaccharides are predominant. Glucose is used as an example, in this instance.

The treatment preparations are in the form of aqueous solutions or emulsions, which may be formulated into shampoos or permanent wave setting lotions (cols. 3 and 5-6). Witsozki teaches that the sugars are present in the composition in percentages ranging from 0.1% to 8% by weight (col. 2, lines 24-30). This range clearly meets the applicant's required range of 0.01% to 5.00%.

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, comprising the application of C₃-C₅ monosaccharide sugar composition.

Witsozki teaches such a method for regenerating, revitalizing or repairing hair comprising applying mono- or disaccharide sugar, particularly of pentoses (5 C-atoms) and the disaccharides derived from pentoses (see col. 2, lines 36-40). Witsozki teach at col. 6, lines 3-5, that, "in every case, it was found that the hairs had been regenerated, i.e., the split-ends had been partially *repaired*." There is no distinction observed between the prior art and the instant invention since the applicant's objectives have clearly been met and addressed by the prior art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Witsozki, who teaches a method of repairing split-end hair, comprising sugars, such as (5 C-atoms) pentoses and the disaccharides derived from the pentoses, because Witsozki demonstrates that a hair regenerating effect can be enhanced by employing a mono- or disaccharide to treat damaged hair. The expected result would be an improved method for regenerating split-ends and ultimately, a progressive reparative process for keratinous substances.

Koga ('838) teaches a method for providing enhanced moisture retention and reducing excessive roughness and dryness of the hair comprising the application of a xylobiose sugar composition to the hair (see Abstract). Koga teaches that xylobiose preparations are effective not only in reducing excessive roughness and dryness of the skin to impart a natural moistness and luster but also in reducing excessive roughness and dryness of the hair to give a natural oiliness (col. 1, lines 8-14).

Xylobiose may be incorporated into hair care products, such as hair treatments, rinses and hair conditioners, and detergents such as hair shampoos and body shampoos. The preparations can be formulated into various dosage forms, such as aqueous solutions, emulsions and water/oil bilayer systems (col. 2, lines 14-26).

Xylobiose is taught to be contained in an amount of 0.0001% to 20-wt %, preferably 0.1% to 10 wt % of the composition (col. 2, lines 27-36). This range clearly meets the applicant's required range of 0.01% to 5.00%.

Koga teaches that the xylobiose composition contains xylan saccharified products other than xylobiose, such as xylose and xylotriose. These materials will in no way, impair the moisture-retaining capability of xylobiose (col. 2, lines 37-46).

Bases that are used in the cosmetic compositions can include, sugar esters, saccharides and sorbitol, for example (col. 3, lines 5-15). The examples in columns 4-9, taught by Koga demonstrate the measurements of moisture retaining capability of xylobiose in various skin preparations. In Example 7 (col. 10), Koga teaches the use of xylobiose in a hair shampoo formulation. The results show a natural oiliness when actually applied to the hair and are satisfactory in reducing excessive roughness and dryness of the hair (and skin) (col. 10, lines 1-27).

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage. There is no distinction observed between the prior art and the instant invention, since the prior art teaches the reduction of roughness and dryness of the hair. The examiner notes that this is, in essence, a reparative process for improving damaged hair.

Koga teaches a method for reducing excessively dry, rough hair and restoring hairs natural oiliness with moisture. Rough, dry hair is usually brittle, weak hair. As is generally known, hair that is moist or oily tends to be stronger in nature than rough, dry hair. Koga teaches that the xylobiose composition, which is used in various forms (i.e., hair care products, such as hair treatments, conditioners, rinses, shampoos, etc), reduces the excessive dryness and roughness of hair.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the xylobiose composition of Koga, who demonstrates an effective method of reducing excessive rough, dry hair through the application of xylobiose, because Koga teaches that xylobiose exhibits high moisture retaining capabilities. The expected result would be moist, healthier looking, stronger hair.

Syed ('477) teaches a method for the reduction of hair damage and a process for relaxing hair fibers, comprising applying to the hair fibers, a lanthionization composition that comprises sugars, resulting in less damaged hair that has *greater tensile strength* as that compared to hair that does not contain sugar. The composition may contain one or more sugars, or a combination of hydrogenated starch and sugars. Syed teaches that the sugar may be contained in the composition in the range of about 0.1% to about 5.0% by weight of the composition (see reference column 2, lines 48-67). This range clearly meets the applicant's required range of 0.01% to 5.00%.

Representative sugars that can be used in the composition include, but are not limited to sucrose, glucose, fructose, sorbitol and glycerol. The sugars preferably used are sucrose or sorbitol (col. 3, lines 5-8). Syed teaches that the composition may be in the form of a solution or a cream (col. 3, lines 9-12).

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, wherein repairing a damaged

keratinous fiber, according to the applicant's interpreted definition, means increasing the alpha-structure and/or increasing the tensile strength of damage to keratinous fibers.

Syed teaches a method for increasing the tensile strength and reducing hair damage comprising the application of a composition composed of sugars (i.e., sucrose, glucose, fructose, sorbitol and glycerol). Syed explicitly teaches at col. 2, lines 48-56, that the addition of a sugar, directly applied to the lanthionization composition, surprisingly, results in hair that has greater tensile strength as compared to a lanthionization composition, which does not contain any sugars.

The applicant attempts to distinguish over the prior art by including specific definitions for the terms, "protecting" and "repairing". However, the prior art fully meets the criteria for providing an effective composition for preserving or increasing the tensile strength of hair. In addition, the applicant's have not shown any unexpected results that accrue from the use of C₃-C₅ sugars. The prior art has initially shown that beneficial effects are brought about by the use of various sugars in hair compositions.

Therefore, it would have been obvious to one of ordinary skill in the hair art at the time the invention was made to use the teachings of Syed, who teaches a method for the reduction of damaged hair and particularly a method wherein hair can have greater tensile strength due to the application of a composition comprising sugars because Syed explicitly teaches that the addition of sugars to the composition can surprisingly increase the tensile strength of hair. The expected result would be an effective method for the repair of hair fibers and thus stronger, healthier hair.

In conclusion, the prior art teaches that the claimed sugars are useful in protecting keratin fibers from external damage. The sugars are useful in protecting hairs against split ends, increasing tensile strength and reducing damage during harsh treatments. The art further teaches that such sugars may be incorporated into formulations and subsequently treated permanent wave lotions or relaxing compositions because these sugars are known to provide beneficial properties to hair and keratinous fibers. Thus, the invention is rendered *prima facie* obvious over the prior art of record.

Response to Arguments

Applicant's arguments filed 02/02/05 have been fully considered but they are not persuasive.

Applicant argued, "The references upon which the Office relies do not teach or suggest heating the keratinous fibers to at least 45°C. Syed mentions only a tepid water rinse application of the lanthionizing composition and evaluating the tensile strength while the hair is immersed in water at a temperature of 21°C. Syed provides no reason to heat the hair to at least 45°C.

Wisotzki teaches only a hair rinse at 25°C or 30°C after application of a composition for repairing split ends. Wisotzki, like Syed actually uses a C₆ sugar (glucose), however glucose does not provide the protective effect seen with C₃ to C₅ mono- and disachharides.

Regarding Koga, Koga discusses temperature with respect to humidity chamber experiments, which in some cases expose the composition to 35°C. Koga does not teach applying the composition to a keratinous fiber prior to or during the heating. Instead, the

composition is heated only in the humidity chamber experiments, which do not involve application of the composition to a keratinous fiber.”

Applicant’s arguments have been carefully considered, but were not found persuasive. Applicants have amended the claim language to recite heating of keratinous fiber ‘to at least 45°C.’ Applicants’ arguments that the prior art provides no motivation to select C₃ to C₅ sugars as claimed, nor the heating of keratinous fiber ‘to at least 45°C is not persuasive since the prior art does teach pentose sugars for application to the hair to result in the revitalization, repair of hair, whereby hair has greater tensile strength. Applicants therefore have not shown any unexpected results that accrue from the use of C₃-C₅ sugars, since the prior art initially provides for the reduction of damage to hair using the sugars taught in the prior art. Although the temperatures taught in the prior art (*i.e.*, Wisotzki teaches 25°C or 30°C) are slightly lower than the ‘at least 45°C’ claimed, the Examiner points out that, generally, differences in temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation”. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In the instant case, Applicants have not demonstrated any unexpected or unusual results that accrue from the claimed temperature of ‘at least 45°C’. The prior art recognizes and suggests hair care formulations comprising the same ingredients, such as C₃-C₅ sugars, used in the same field of endeavor, using slightly lower, yet similar temperature ranges, to result in methods whereby damage to hair is decreased and reparation of hair is increased, using the temperatures taught by the art. Burden is shifted to Applicant to demonstrate some unexpected results or criticality in

the claimed amount of 'at least 45°C' since the prior art teaches obtaining effective results using the temperatures presented in the art. Thus, in view of the teachings of the art, the instant invention is rendered *prima facie* obvious.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Humera N. Sheikh whose telephone number is (571) 272-0604. The examiner can normally be reached on Monday through Friday from 8:00A.M. to 5:30P.M., alternate Fridays off.

Art Unit: 1615

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

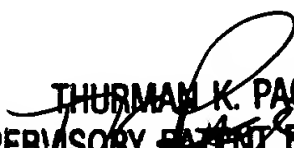
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. N. Sheikh 

Patent Examiner

Art Unit 1615

March 24, 2005


THURMAN K. PAGE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600